

**ABSTRACT**

Disclosed is a phase-demodulation method for minimizing the phase error of a communication signal. The phase-demodulation method for demodulating a phase-  
5 demodulated communication signal using a digital phase-demodulation algorithm includes the steps of: adding one sampling to the digital phase-demodulation algorithm represented by an equation  $F_k(x) = \sum_{k=0}^{k-1} C_k x^k$ , where k is the number of sampling times and  $C_k$  is a complex constant; and, demodulating the phase-demodulated communication signal. Accordingly, the phase-demodulation method minimizes the phase error generated when a  
10 noise is propagated in phase space during a demodulation time of the phase-modulated communication signal, using a minimum number of sampling times and a minimum number of calculation times.